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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,259	03/11/2004	Yowjuang (Bill) Liu	060889-5001	1745

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MORGAN, LEWIS & BOCKIUS LLP
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Palo Alto, CA 94304

EXAMINER

LE, THAO P

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/800,259

Applicant(s)

LIU ET AL.

Examiner

Thao P. Le

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 17-20 are rejected under 35 USC 102 (b) as being anticipated by Takenaka, U.S. Patent No. 5,614,752.

Regarding claim 1, Takenaka discloses a method for forming a device on a substrate similar to what recited in claim 1, see Figs 1a-1c and lines 1-31, Col. 3), the method comprising:

- . forming a gate 105 (fig. 1b) over the substrate;
- . forming a source/drain extension region 103 (fig. 1c) on each side of gate, source/drain extension regions having dopants of a first conductivity type (n-type, Fig. 1c);
- . forming at least one corner diffusion region 106, the corner diffusion region including dopants of a second conductivity type (P-type), the corner diffusion

region is overlapping with at least a portion of source/drain extension region (lines 10-30, Col. 3);

. forming source/drain diffusion regions 102 (figs. 2b-2c) in the substrate adjacent the source/drain extension regions on opposite sides of the gate, the source and drain diffusion regions is further away from the gate than the source/drain extension regions and including dopants of the first conductivity type (n-type).

Regarding claims 2-3, Takenaka discloses the wherein the source/drain extension regions extend between two opposite sides of the device and the corner diffusion region overlaps a portion of source/drain extension region or extends between the two sides of the device (Fig. 1a).

Regarding claim 4, it is inherent that a mask is need when forming corner diffusion regions in order to implant/diffuse dopants into the corner diffusion as shown in Fig. 1a but not to over regions in the device.

Regarding claim 5, Takenaka discloses active area is bordered on some or all sides by isolation regions 108 in the substrate and exposed portion of the active area is near at least one of the isolation regions (Figs. 1b-1c).

Regarding claim 6, Takenaka discloses wherein the device is formed on the substrate together with a plurality of other devices and wherein the corner diffusion regions are formed during a sequence of processes for forming source/drain extensions in some of the plurality of other device (see Fig. 9; lines 30-67, Col. 6; cols. 7-8).

Regarding claims 7-8, it is inherent that the source/drain extension in Takenaka is formed using LDD implant process and it is also inherent that PLDD is used for PMOSFET and NLDD is used for NMOSFET.

Regarding claim 17, Takenaka discloses a method for forming an IC including NMOSFET and PMOSFET device (See Figs. 9-11) comprising forming n-type diffusion regions in the NMOSFET and forming at least some of NMOSFET devices p-type diffusion regions with at least one p-type diffusion region in at least one of PMOSFET devices.

Regarding claims 18-20, Takenaka discloses both p-type and n-type dopants are in both N and PMOSFET, and it is inherent that the source/drain regions in Takenaka are formed using LDD implant process and it is also inherent that PLDD is used for PMOSFET and NLDD is used for NMOSFET.

When responding to the office action, Applicants' are advice to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P. Le whose telephone number is 571-272-1785. The examiner can normally be reached on M-T (7-6).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thao P. Le
Examiner
Art Unit 2818



David Nelms
Supervisory Patent Examiner
Technology Center 2800